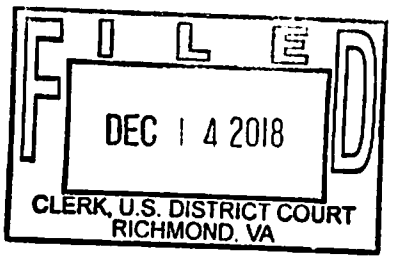
IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Richmond Division



GOLDEN BETHUNE-HILL, *et al.*,

Plaintiffs,

v.

VIRGINIA STATE BOARD OF ELECTIONS, *et al.*,

Defendants

Civil Action No. 3:14cv852

BRIEF OF THE PRINCETON GERRYMANDERING PROJECT IN RESPONSE TO THE REPORT OF THE SPECIAL MASTER

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STATEMENT OF INTEREST OF NON-PARTY
THE PRINCETON GERRYMANDERING PROJECT

Non-party the Princeton Gerrymandering Project ("PGP") is a research organization housed within Princeton University in Princeton, New Jersey. PGP seeks to integrate the law with statistical analyses and data science to provide courts and their officers with the best information possible to analyze gerrymandering claims. PGP has previously spoken on best practices for drawing a remedial plan in this case, most notably publishing an editorial in *The Virginian-Pilot* in late August. Ben Williams, William T. Adler, and Sam Wang, *Lawmakers Should Fix Inequitable District Lines*, VIRGINIAN-PILOT (Aug. 30, 2018). Accompanying that announcement, PGP publicly released the political and geographical data necessary for members of the public to draw their own maps, http://gerrymander.princeton.edu/virginia/, which they can compare against the Special Master's maps and the maps ultimately adopted by this Court. PGP founder Professor Sam Wang also has published scholarship in the *Stanford Law Review* (proposing statistical tests to assist judges in analyzing partisan gerrymandering claims), articles explaining the impacts of gerrymandering for the *New York Times*, and was an amicus in the recent United States Supreme Court case *Gill v. Whitford*. *See* Samuel S.-H. Wang, *Three Tests for Practical Evaluation of Partisan Gerrymandering*, 68 Stan. L. Rev. 1263 (2016); Sam Wang, *The Great Gerrymander of 2012*, N.Y. Times Opinion (Feb. 2, 2013); Brief of Heather Gerken, Jonathan N. Katz, Gary King, Larry Sabato, and Samuel S.-H. Wang as *Amici Curiae* in Support of Respondents, *Gill v. Whitford*, 138 S.Ct. 1916 (2018).

In its October 19, 2018 order, this Court invited "any non-parties desiring to do so" to "submit their objections to, if any, and briefs in response to the remedial plan, maps, and briefing submitted by Dr. Grofman on December 7, 2018." Dkt. 278. PGP believes that of the several "modules" proposed by Dr. Grofman, the combination which makes the greatest number of

changes from the map currently in effect—Richmond 1B, Petersburg 2, Peninsula 2, and Norfolk 1C—best remedies the constitutional infirmities identified by this Court, while advancing both the General Assembly's redistricting goals and satisfying the commands of the Virginia Constitution. PGP respectfully submits this brief for the Court's consideration in formulating the remedy for redistricting the Virginia House of Delegates.

ARGUMENT

I. An Effective Remedy for a Racial Gerrymander Should Not Minimize Changes to the Existing Plan to the Detriment of the State's Mandatory Districting Criteria.

When the Legislature's districting has separated voters "on the basis of race," *Shaw v. Reno*, 509 U.S. 630, 649 (1993), that unconstitutionality necessarily affects both the districts with identified infirmities and those districts adjacent to them. While a District Court is properly "limited to ensuring that [plaintiffs are] relieved of the burden of voting in racially gerrymandered legislative districts," *North Carolina v. Covington*, 585 U.S. ___ (2018), it does not follow that a remedy is restricted to making as few changes as practicable. If necessary to best comply with the criteria mandated by a State's constitution, a District Court is empowered to make changes above the absolute minimum number of alterations necessary to remedy the constitutional infirmity, so long as the additional changes are in furtherance of the State's mandatory redistricting goals.

To this point, the Virginia Constitution requires that districts "be composed of . . . compact territory." VA. CONST. art. II, § 6. Earlier this year, the General Assembly passed legislation reaffirming the importance of compactness in districting. It was sponsored by the Delegate who passed the districting plan currently in effect, emphasizing the importance of compactness to the person whose existing map is owed deference by this Court. H.B. 1598 (Virginia 2018). This legislation was ultimately vetoed by the Governor. Rather than redrawing districts beyond the scope of this Court's authority, a remedial plan giving deference to Virginia's command of compactness would simply reconcile the requirement to remedy the constitutional infirmity with the Commonwealth's and House of Delegates plans. *Cf. Covington*, 585 U.S. at 9 (discussing how a Special Master's alteration of districts not touching districts found to be unconstitutional racial gerrymanders exceeded the District Court's authority to provide relief to plaintiffs).

II. An Effective Remedy for a Racial Gerrymander Should Naturally Distribute African-American Voters Across the Impacted Districts and their Neighbors.

While not conclusive in identifying racial gerrymanders, plotting districts according to the percentage of their voting age population which is African-American can highlight distributions of minority voters unlikely to arise from race-neutral redistricting. In situations like the instant case, where districts were drawn with racial quotas, the requirement that certain districts contain high populations of African-Americans of voting age (hereinafter black voting age population, or "BVAP") deprives neighboring districts of voters who may reside within them absent this intent. This "packing" is reflected in the distribution chart in Appendix B, where the "gap" between the eleven districts subject to the unconstitutional racial quota identified by this court and the next closest district readily apparent.

A statistical analysis of plans following Virginia's redistricting principles indicates that the distribution of BVAP as enacted by the General Assembly (the "Enacted Plan") in 2011 is an extreme outlier among an ensemble of hundreds of thousands of legally compliant maps. This was laid out in a report by the Metric Geometry and Gerrymandering Group ("MGGG Report") at Tufts University, led by Professor Moon Duchin. The MGGG Report found that of the eleven unconstitutional districts and their twenty-two neighbors, none of the Enacted Plan's districts contained BVAPs in the range of 37-55%, a zone identified as being "crucial" to analyses of the Voting Rights Act nationally and in Virginia. MGGG Report at 3. But race-neutral redistricting would be expected to produce as many as ten districts in this range. *Id.* at 6.

Further still, the MGGG Report found that the Enacted Plan's elevation of BVAP in the twelve districts protected by the Voting Rights Act "dilut[ed] . . . districts that were at or nearing the zone in which statistical analysis has indicated opportunities to elect more candidates of choice for the Black community." *Id.* at 4. This caused up to seventeen other districts to have BVAP levels

"far below what would be expected from race-neutral redistricting." *Id.* at 6. Indeed, a majority of the Enacted Plan's districts contain BVAPs outside the 99th percentile of possibilities as discovered in the MGGG Report's ensemble of plans. Such extreme outliers indicate the Enacted Plan is an extreme outlier that is statistically unlikely to have arisen without racially discriminatory intent.

III. The Special Master's Plan Which Makes the Greatest Number of Possible Changes Best Addresses These Compactness and BVAP Concerns

The previous sections establish that a plan which (i) best preserves or increases the compactness of the affected districts and (ii) possesses a natural distribution of districts sorted by their share of BVAP should be adopted as the remedy in this case. Of the thirty-six possible combinations of Professor Grofman's plans, the combination which makes the greatest number of changes—Richmond 1B, Petersburg 2, Peninsula 2, and Norfolk 1C—best meets these goals. We recommend the adoption of this combination of modules as the remedy in this case, subject to small tweaks as this Court deems appropriate.

Appendix A shows the distribution of districts under four separate plans, organized in ascending order by scores on the two compactness tests used by Prof. Grofman in his report and used by the Commonwealth in its preclearance report on the House of Delegates Plan to the Department of Justice in 2011. *See Vesilind v. Va. State Bd. of Elections*, 813 S.E.2d 739 (Va. 2018) (stating that Virginia's preclearance report to the Dept. of Justice used the Reock, Polsby-Popper, and Schwartzberg methods of measuring compactness). The four plans discussed in the Appendix are (i) the map drawn by PGP in August 2018 ("Princeton Plan"), (ii) the Enacted Plan, and two variations of maps created from Prof. Grofman's various modules: (iii) the combination

which makes the fewest number of changes ("Least Changed Map")[1], and (iv) the combination which makes the greatest number of changes ("Most Changed Map"). The Polsby-Popper and Reock tests are two distinct measures of compactness widely accepted in legal and political science scholarship. The Most Changed Map scores as well or better than the Enacted Plan on both metrics. In fact, under Polsby-Popper, there is a quantifiable increase in compactness as more changes that are made: the Least Changed Map scores higher than the Enacted Plan in all 33 districts measured, and the Most Changed Map scores higher than the Least Changed Map in all 33 districts measured. This increase in scores best complies with the General Assembly's reaffirmation of the importance of compactness in legislative redistricting in Virginia.

Appendix B shows the distribution of districts under four separate plans, organized by increasing proportions of BVAP. Again, four plans are listed: (i) the map drawn by PGP in August 2018, (ii) the Enacted Plan, (iii) the Least Changed Map, and (iv) the Most Changed Map. The BVAP "gap" between districts packed and their neighbors, referenced in Section II, *supra*, is clearly visible. In fact, the gap between the 21st and 22nd districts in the Enacted Plan is from just below 30% BVAP to nearly 55% BVAP—a twenty-five point jump not reflected in any of the other plotted maps or MGGG ensemble maps. Indeed, the next highest gap (in the Least Changed Map) is approximately ten points. By contrast, the Most Changed Map has a gap of less than ten points, and the map drawn by PGP in August 2018 has no gap at all. The Most Changed Map's distribution most closely aligns with the distribution which would be expected in race-neutral redistricting as discovered by the MGGG Report, and thus it best eliminates the unnatural sorting of voters on the basis of race which is unlikely to have occurred by chance.

[1] The combination of modules from Prof. Grofman's report making the fewest number of changes is Richmond 1A, Petersburg 1A, Peninsula 1, and Norfolk 1A.

IV. The Best of the Special Master's Plans Comes Closest to the Princeton Map in Terms of Remedial Outcomes

Lastly, the Most Changed Map comes closest to matching the BVAP distributions and compactness scores of the Princeton Plan, which are referenced in the MGGG report and are listed in Appendices A and B, *infra*. The creators of the Princeton Plan sought to "split fewer precincts than the current map, keep counties and cities whole where [possible], and reassign some African American communities from the offending districts." Williams, Adler, Wang, "Lawmakers Should Fix Inequitable District Lines," *Virginian-Pilot* (Aug. 30, 2018). The Princeton Plan's remedying of the constitutional infirmities identified by this court resulted in districts that were more compact, had a natural BVAP distribution without any suspect "gaps" between groups of districts (see Appendix B), and increased the power of minority groups to influence elections and elect candidates of their choosing. While not directly related to the remedy in this case, this increase in voting power is a something that would have been granted to Virginia's protected classes throughout the decade had the maps not been drawn nefariously.

The thirteen districts fall into the 37-55% BVAP zone under the Most Changed Map is closest to the expected natural distribution found in the Princeton Plan; it certainly removes most of the suspicious "gap" found in the Enacted Plan. Additionally, while not achieving the same increases in compactness as the Princeton Plan, the Most Changed Map comes closest to living up to the commands of the Virginia Constitution and the stated desires of the General Assembly on the issue. For that and all of the aforementioned reasons, the Most Changed Plan best reflects a remedy that would satisfy both this court and the laws of this Commonwealth.[2]

[2] One key difference in the methods of construction between the Princeton Plan and the plans drawn by Prof. Grofman is the consideration of incumbency: while Prof. Grofman sought to avoid pairing incumbents without degrading other criteria, the creators of the Princeton Plan neither had access to such information.

CONCLUSION

For the foregoing reasons, this Court should adopt the combination of Prof. Grofman's proposed modules which makes the greatest number of changes to the district map adopted by the General Assembly in 2011. Its adoption will guarantee both that the General Assembly's goal of drawing compact districts will be followed, and that the resulting district plan will possess a natural BVAP distribution that closely mirrors similarly constructed race-neutral districting plans.

Dated: December 14, 2018

Respectfully submitted,

s/

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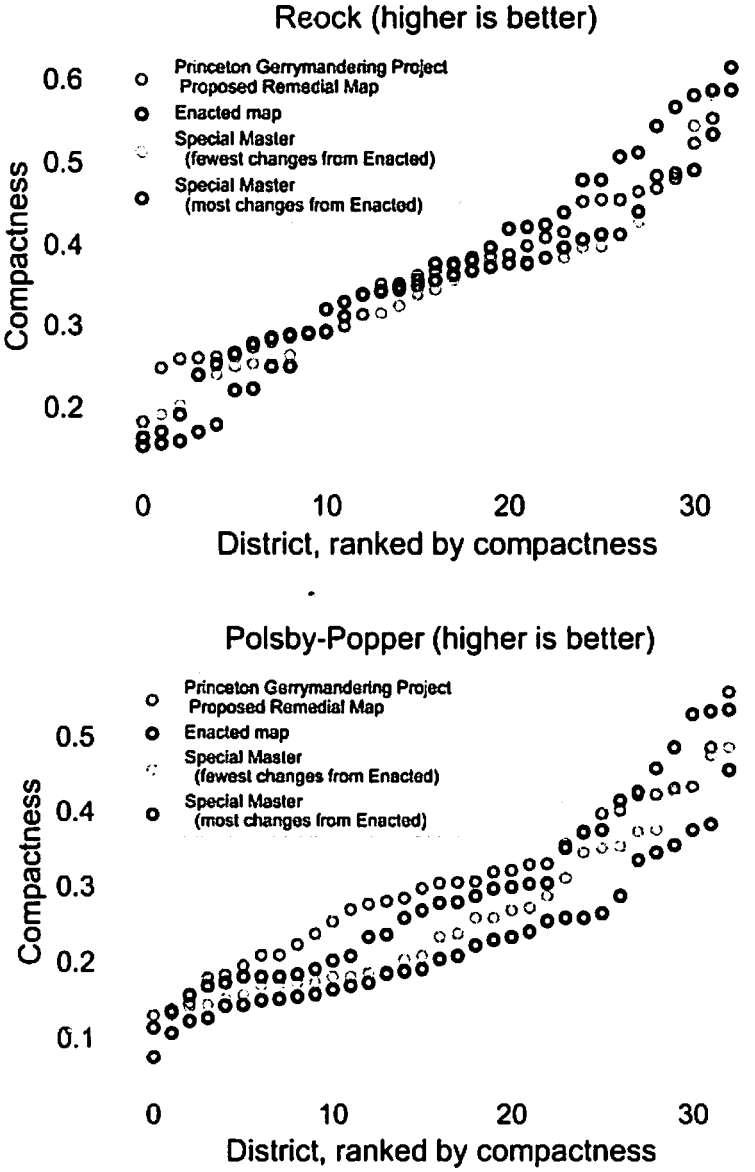
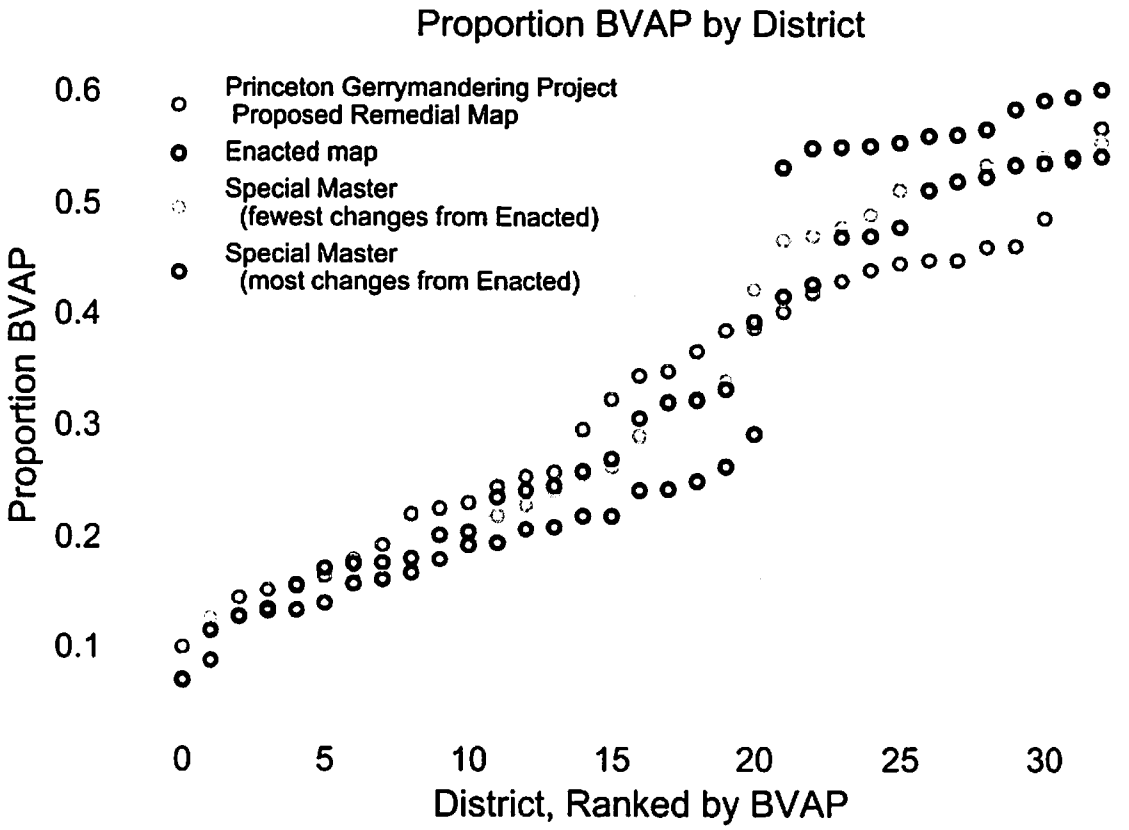
Appendix A



The compactness of districts in each of four maps from least to most compact. Higher scores are indicative of greater compactness under both of these metrics. It is easy to see that the Princeton Plan and Most Changed Map consistently score better than the Enacted Map and Least Changed Map with respect to both compactness measures.

Appendix B



Proportion black voting-age population (BVAP) of each district in the same four maps listed in Appendix A, sorted from smallest to largest proportion. The gap between the 12 districts with highest BVAP proportion and the rest is very pronounced when looking at the Enacted Map, while the rest seem to have more natural distributions.